Environmental Consulting
Planning
Impact Statements
Biological Investigations

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Wildlife
Vegetation
Soil
Water

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October 23, 1984

Ms. Susan Linner
Permit Supervisor
State of Utah, Division of Oil,Gas and Mining
4241 State Office Building
Salt Lake City, Utah 84114

Dear Susan;

I appreciated the time and effort you and the other staff members put forth last week to take in the field tour of Sunshine's operations in the Tintic Mining District. This common knowledge of the area is going to make it much easier for us to work out the details of the permit.

Based on discussions fron the field tour and review I have enclosed several changes to the application and also some additional data. I have also spoken with Steve McNeil of Water Pollution Control and he plans to visit the site in early November. I imagine Steve should give us a fair idea at this time of what method or methods the State will approve for disposing of the mine waters.

Sincerely,

Joseph M. Jarvis

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1. Trixie Mine Drainage

The 20.9 acres of watershed extends 300 feet in elevation above the mine pad. The small drainage channel enters an 18 inch culvert that extends approximately 15 feet into the waste rock dump where it discharges below the surface of the dump. This system has operated this way for 15 years. Also the discharge from the Trixie Mine travels through the waste rock dump without any sign of backing or pooling.

With this background we feel the high percolation character of the waste rock dump is self evident. Possibly a grate across the culvert entrance may prevent an accumulation of debris on the discharge end eventually clogging the culvert.

Soils

Wallsburg-Yeates Hollow Complex
A shallow, well drained, cobbly loam soil. Permeability moderately slow with bedrock at 10-20".

2. Tailings Pond

a. Seed Mixture - add

blanket flower	Gaillardia aristata	2 lbs/A pls
Pacific aster	Aster chilensis	1 lbs/A pls

b. Topsoil
The Donnardo stony loam has a A11 and A12 horizons with a total depth of 10". The underlying C horizons have a high percentage of gravels,cobbles and stones. The top ten inches appears to be the only suitable planting medium. Any excess topsoil not required for pond rehabilitation will be used at the Burgin Mill site.

3. Vegetation Transects

100' Line Intercepts with 1000 intervals

Tailings Pond

Item	Intervals			% of Total		
Transects	A-1	A-2	A-3	A-1	A-2	A-3
Bare	379	405	214	37.9	40.5	21.4
Litter	421	321	414	42.1	32.1	41.4
Rock	1	10	0	0.1	1.0	0.0
Hilaria jamesii	53	0	6	5.3	0.0	0.6
Oryzopsis hymenoides	0	12	0	0.0	1.2	0.0
Bromus tectorum	74	105	294	7.4	10.5	29.4
Chrysothamnus viscidiflorus st.	85	17	51	8.5	1.7	5.1
Lepidium perfolatum	1	30	36	0.1	3.0	3.6
Total Understory	213	166	387	21.3	16.6	38.7
less Bromus tectorum	139	61	93	13.9	6.1	9.3
Artemisia tridentata	405	337	78	40.5	33.7	7.8
Chrysothamnus viscidiflorus	0	0	85	0.0	0.0	8.5
Total Overstory	405	337	163	40.5	33.7	16.3

Total Understory Average	25.5%
less Bromus tectorum	9.8%
Total Overstory Average	30.2%
Total Cover Average	55.7%

Settling Ponds

Item	Intervals		% of Total	
Transects	B-1	B-2	B-1	B-2
Bare	64	132	6.4	13.2
Litter	311	306	31.1	36.6
Rock	0	3	0.0	0.3
Bromus tectorum	323	204	32.3	20.4
Sporobolus cryptandrus	268	302	26.8	30.2
Agropyron sp.	20	9	2.0	0.9
Agropyron smithii	8	0	0.8	0.0
Aristida sp.	0	34	0.0	3.4
Oryzopsis hymenoides	2	0	0.2	0.0
Chrysothamnus viscidiflorus st.	0	10	0.0	1.0
Total Understory	621	559	62.1	55.9
less Bromus tectorum	298	355	29.8	35.5
Sarcobatus vermiculatus	66	66	6.6	6.6
Artemisia tridentata	0	54	0.0	5.4
Total Overstory	66	120	6.6	12.0

Total Understory Average	59.0%
less Bromus tectorum	32.7%
Total Overstory Average	9.3%
Total Cover Average	68.3%